

COMMENTARY

Non-specialist emergency medicine qualifications in Africa: Lessons from the South African Diploma in Primary Emergency Care

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ABSTRACT

Introduction: Non-specialist emergency medicine qualifications are an important step in developing the specialty of emergency medicine. The Diploma in Primary Emergency Care (Dip PEC) of the Colleges of Medicine of South Africa is one of the oldest registrable qualifications. Reviewing its changing role over time has lessons for academics developing Emergency Medicine training in Africa.

Methods: Through a series of meetings and stakeholder engagements, the Council of the College of Emergency Medicine conducted a three year review of the qualification focusing on the curriculum, assessment processes, success rate and role of the qualification in the South African medical context. A survey of the perceptions of graduates over the last six years was also conducted.

Results: The survey showed candidate numbers increased dramatically from 2011 to 2017, resulting in an entry cap. Lessons identified included ensuring that the qualification is responsive to the state of development of emergency medicine in the country, needing aligned and valid assessment processes and maintaining the value of the qualification in context.

Discussion: Emergency medicine qualifications are dynamic in and of themselves and how they relate to their context. Program designers must prioritize ongoing evaluation from the start.

Introduction

With the growth of emergency care in Africa, there is a great deal of interest in developing educational products to increase emergency medicine (EM) knowledge and skills. Whilst these products may be in addition to or as precursors to EM specialist training, they may also be stand-alone products aimed at improving EM competencies in the general physician population.

These educational products range from short introductory courses such as The African Federation for Emergency Medicine (AFEM) Keystone course and the World Health Organization (WHO) Basic Emergency Care course to more extended teaching and learning programs such as the AFEM one year curriculum [1,2]. In South Africa, there is also a range of EM university-based Masters degrees available for the academic development of non-EM specialists, such as the Master of Science at the University of Witwatersrand and the Master of Philosophy at the University of Cape Town. One of the oldest register-

able EM qualifications in Africa is the Diploma in Primary Emergency Care (Dip PEC) of the College of Emergency Medicine of South Africa (CEM) – a constituent college of the Colleges of Medicine of South Africa (CMSA). The CMSA represents 29 specialty medical and dental colleges and is the national assessment body for postgraduate medical training in South Africa. Specialist training requires 4 years of registration for a university-based Master of Medicine (MMed) while in a training post recognised by the Health Professions Council of South Africa (HPCSA) and completion of the relevant fellowship examinations through the CMSA.

The relationship between specialist and non-specialist qualifications is a complex and dynamic one. This is particularly relevant to the African context where there is currently a strong impetus for specialist qualifications [3]. This development may have unintended consequences on the educational environment increasing the demand for specialty training and the competition for training posts by junior doctors. The CEM has seen a significant evolution in the role and scope of the Dip PEC

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History of Emergency Medicine in South Africa

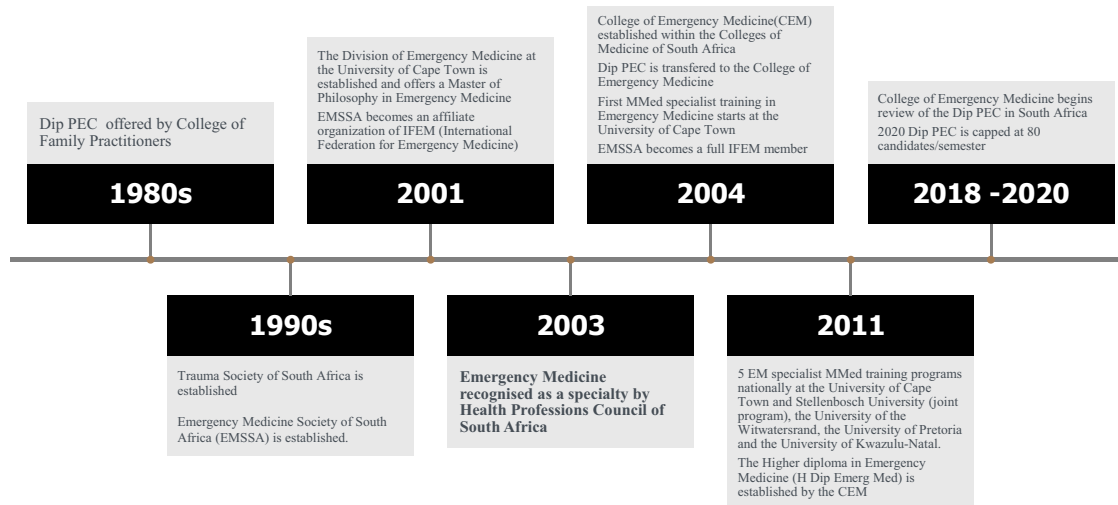


Fig. 1. The history of emergency medicine in South Africa.

over the past few years and we believe that an analysis of this process has value for other African countries looking to develop their own EM educational products and qualifications.

The Dip PEC was the first registrable postgraduate EM qualification in South Africa and was first offered in 1986 by the College of Family Practitioners. It remained the only postgraduate EM qualification available in the country until the recognition of EM as a specialty by the HPCSA in 2003 and the subsequent establishment of the CEM in 2004 (Fig. 1) [4]. The Dip PEC is registrable with the HPCSA allowing candidates to use the post-nominals professionally.

The Dip PEC was initially targeted at the cohort of South African doctors already working in emergency care, emergency units, and emergency medical services seeking to formalize their knowledge, skills, and expertise. Many of them had numerous years of experience and had completed several emergency care-related short courses - some of whom were eventually 'grandfathered' by the HPCSA as EM specialists. As a result, the examination standard was set at an expert level, and the pool of candidates was relatively small.

The Dip PEC was also seen as a marker of commitment to a specialist career in EM. For a brief period (2003–2004), it was considered the primary examination for the Fellowship of the College of Emergency Medicine (FCEM) before being replaced by a basic science examination. Many EM MMed training programs in South Africa have the Dip PEC as a requirement for entry.

Over time, the CEM council aligned the Dip PEC outcomes to the standard of other diplomas offered by the CMSA. These are extended, continuous medical education activities focused on non-specialist, primarily junior, doctors who are developing their competencies in a particular field. Current regulations suggest that the competency level required is a generalist working at a district-level hospital [5]. The focus is on developing the skills and knowledge to manage common emergencies. The syllabus is broad and includes emergencies about all specialties and age groups, as well as associated clinical and practical skills. Learning is self-directed with no formal teaching or faculty. Like all CMSA examinations, the exam is run each semester, with the clinical examination sites rotating through five cities.

Currently, admission to the Dip PEC examination requires candidates to be registered or registerable with the HPCSA as a medical practitioner and possess a valid Basic Life Support certificate. The candidate must have completed their internship and six months at an emergency center accredited by the CMSA. Alternatively, candidates may enter the exam

by demonstrating active interest in EM through a comprehensive learning portfolio [5].

The Dip PEC is currently the largest diploma with a clinical component offered by the CMSA. In terms of popularity, it has outstripped the diplomas in Anaesthetics and Child Health. It is surpassed in numbers only by the diploma in HIV Management – a written only diploma [6].

The popularity of the Dip PEC has substantially increased in recent years, with 21 successful candidates in 2012, compared to 136 in 2017 (Fig. 2) [6]. This coincided with the growing awareness of EM as a specialty and the development of EM specialist training in major cities. There was increasing engagement by EM specialists with undergraduate medical programs making young doctors more aware of EM knowledge and skills and potentially highlighting the lack of training.

The Dip PEC written assessment initially consisted of two three-hour short answer question papers. In 2019 it transitioned to one Multiple Choice Question (MCQ) paper and one Visually Aided Question (VAQ) paper. The written examination can be written at multiple national examination centres and a selected number of African CMSA examination sites. Candidates who are successful in the written examination are invited to the clinical examination, which consists of an Oral Simulated Clinical Examination (OSCE), which includes practical skills assessment stations, resuscitation skills assessment stations and oral examination stations.

The success rate of the diploma has increased since its inception. This is likely due to a combination of EM skills training entering undergraduate curriculums with more exposure to EM practice and consultants and growing comfort with simulation-based assessment practices. It would also be expected that the shift in standard to generalist competencies would lead to a higher pass rate. Over the 3 years of review, the pass rate has been between 75% and 85%.

There is increasing interest in the qualification from outside of South Africa – several African EM led units have applied to be training sites or are supporting entry to the examination through portfolio use. Successful African candidates have come from Kenya, Zimbabwe and Malawi.

The Dip PEC straddles the public-private emergency care divide well, focusing on core academic EM knowledge and critical basic EM skills. Non-specialist physicians run most emergency centres in South Africa. There are proportionally more private emergency centres than public emergency centres registered as Dip PEC accreditation sites. All public hospitals accredited for intern training are accredited Dip PEC training sites; however, few of these have EM specialists managing the emer-

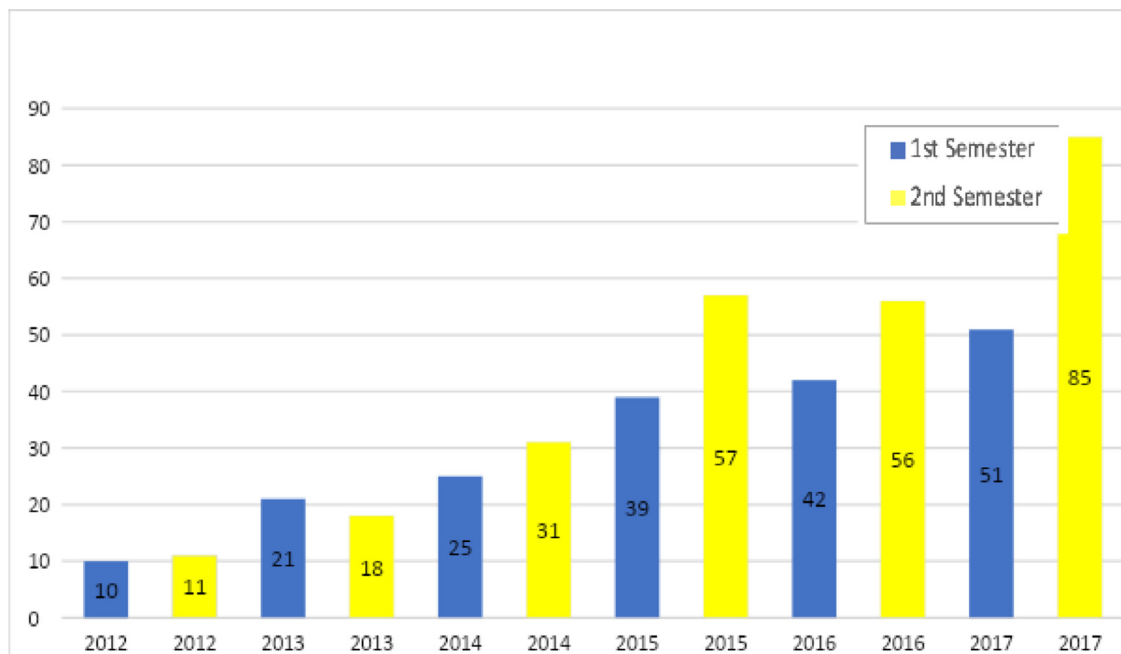


Fig. 2. Number of successful Dip PEC candidates per semester: 2012 – 2017.

gency centres. For emergency centres to become accredited Dip PEC sites, they must be run by a physician who has the diploma or an EM or family medicine specialist and has an active training program with formal clinical supervision. The Dip PEC has an essential role in supporting CPD and professional development in private emergency centres.

In 2011, the College of Emergency Medicine introduced the Higher Diploma in Emergency Medicine (H Dip Emerg Med). While the Dip PEC focused on basic skills, the goal of the Higher Diploma - which could only be entered by candidates who had completed the Dip PEC more than two years prior and had completed a portfolio of further EM experience - was to demonstrate a greater degree of EM competency [7]. This may allow for career and salary progression for non-specialist Emergency Medicine doctors in public and private. Moreover, this enabled the Dip PEC to become a more basic qualification. Challenges with articulation with higher education programs and registration of the qualification with the Health Professions Council have limited uptake, with only two candidates completing the qualification thus far.

In 2020 the CMSA allowed limiting entry into the Dip PEC examination to 80 candidates per semester. This decision to restrict candidate numbers was complex and controversial but mandated by logistical and resource constraints related to conducting the clinical component of the examination. More specifically, the limited pool of voluntary examiners and lack of availability of venues that could accommodate large candidate numbers (exceeding 120) made large OSCEs unfeasible. This restriction was initiated prior to the COVID pandemic and the pandemic delayed the exam so that only one sitting was held in 2020.

Methods

From 2018 –2020, the CEM council conducted an in-depth evaluation of the evolving role of the Dip PEC in the landscape of EM training and general healthcare delivery in South Africa. As part of program evaluation, an electronic survey of 293 successful Dip PEC candidates was conducted by a Masters of Medicine (EM) student at Stellenbosch University.

Results

Participants represented 52% of all candidates completing the Dip PEC between 2012 and 2019. At the time of writing the examination:

82% were working in EM, 66% were working directly with an EM physician, 81% of candidates were early in their careers (within the first seven years post-graduation), and 55% were within two years of internship [6].

The top motivations expressed by participants were to broaden and deepen EM knowledge, obtain a further academic qualification, and prepare for a career in this specialty. Interestingly, the value of the qualification to enable travelling, working and living abroad was frequently mentioned.

The impact of the coronavirus-19 (COVID) pandemic resulted in the clinical examination being postponed and forced the CEM to reflect on the goals and process of the Diploma. The DipPEC review was extended to include the impact of the COVID pandemic on the structure and format of the examination. In the current process of reconceptualising the examination format, the focus is on increasing capacity for the examination without strain on the College examiner pool but also, in a climate of growing acceptability of remote examination, to reframe the examination so that only components that have to value are assessed and in assessment methods that are valid and reliable and safe. The examination has evolved into testing knowledge, skills, behaviours, and attitudes to reflect current best educational and assessment practices and not only core clinical procedures.

Current discussions are framed around remote examination of skills, decentralizing sign off of clinical skill competencies prior to entry and effective low-cost simulation techniques for assessment.

When considering the evolution of the Dip PEC qualification in South Africa, we can identify several vital lessons which may be generalisable to other African settings.

Responsiveness

The Dip PEC is a powerful tool that fills gaps in general provider EM knowledge, competency, and confidence in South Africa due to limited EM training of undergraduate and junior providers. When planning a qualification, it may be helpful to consider national-level outcomes. General EM qualifications may be a critical part of influencing large scale change in healthcare provider competency and undergraduate curricula.

Alignment

The curriculum should mirror the purpose of the qualification and be aligned to the scope of EM knowledge and practice nationally. Alignment to a national standard of care can be difficult when considering the differences in private and public sector practice. The CEM has a nationally elected council from public and private practice and includes specialist and non-specialist members. Oversight of the diploma is performed by the CEM Council and the panel of examiners from around the country. Feedback about content and candidate performance in each examination is routinely given to the CEM council for consideration, and blueprinting of the curriculum is done regularly.

Adaptability

The role of the qualification changes as EM develops in a country and the learning needs evolve - the Dip PEC had to adapt to be fit for purpose. It was initially associated with specialist level training and was regarded as the highest available EM qualification. With the growth of specialist training, the qualification scope changed to a more basic general qualification with a broader candidate pool. When interpreting the value and standard of the Dip PEC, time of completion is critical to understanding the level at which assessment was performed. Programs need to understand the dynamic nature of qualifications. Frequent feedback, regular needs assessments and reflection on the purpose and scope of the qualification is an essential part of ensuring its relevance.

Validity of assessment

Continuous evaluation of assessment processes is necessary to ensure the validity of the assessment itself. The learning environment for the Dip PEC is mainly service-driven and not directly associated with higher educational institutions, and candidates are predominantly self-motivated, independent learners. In this unstructured environment, great value is placed on appropriate and valid assessments. A critical review of each examination cycle by the convenor and moderator is also fed back to the council. Educationalist input, incorporating evidence-based assessment practices and ongoing examiner training is key to ensuring trustworthiness.

Reputability and value

The value of the qualification is partly based on the reputation of the assessment and the assessing body. The external use of the qualification and the way it is viewed globally are important considerations. The Dip PEC leverages heavily on the stature of the CMSA and the history and reputation of this 66-year old organization. The value of the examination is reinforced by the EM community established around it – members of this community are responsible for conducting the examination, establishing training environments, and creating value for the examination. In turn, through the examination, the community is built in a cascading way. Furthermore, the qualification has intrinsic value in terms of identity and demonstrable competence for the individuals in this community - both examiners and successful candidates.

Globalization

The migratory nature of modern medical practice and specifically EM practice is an important consideration. Professional freedom and self-determination mean that doctors may travel for qualifications or work; and attempt the qualification because it is accessible. The pool of candidates is often more heterogeneous than predicted. A clearly defined curriculum with specified learning outcomes and an explicit assessment strategy including rules around language and performance is needed for equitable performance.

Commodification

Qualifications do not exist in a vacuum. In medicine, these may have financial and employment drivers such as career advancement and increased remuneration. In these settings, this may drive the popularity of the qualification. The Dip PEC in South Africa is associated with charging higher locum fees for professional work and is an entry point for employment on cruise ships.

Discussion

The CEM predicts ongoing change in the role and scope of the Diploma. The impact of the pandemic has driven new adaptations in the format of the exam with increasing remote-based assessment and a view to incorporate work-based assessments. The increased engagement of EM in undergraduate training nationally suggests that the basic emergency skills that are now the focus will soon be a required competence for all graduates. The challenge will then be to identify the new role for the Dip PEC, potentially as a qualifier to work in an Emergency center or as a surrogate of higher-level emergency care skills and the transition from junior to a senior Emergency Care provider. These evolutions would necessitate a review of the curriculum, the entry requirements and assessment processes, and prompt the CEM to explore the potential impact on the national landscape of medical qualifications and human resources for health.

With interest from many African countries in the diploma, it is useful to reflect on the meaning and value. It is clear that the role and scope of the curriculum are determined by the human resource need in South Africa and that the Dip PEC is not a static qualification. African candidates likely complete the diploma for the same reasons as local candidates, namely to improve EM skills and knowledge and to have a qualification that shows their commitment to EM as a specialty. In some cases, this may increase their eligibility for local or sponsored international specialist training. The political power of a South African qualification is also a factor, particularly in Sub-Saharan Africa. New qualifications should consider issues such as accessibility for international candidates and transferability of the qualification. The scope of the curriculum and the level of assessment should be clarified so that appropriate judgement can be made in other settings as to the value of the qualification. It is also useful to look broader at the impact a new medical qualification will make across the board to all medical graduates in a country or region. One may need to review the need for generalist EM training, the potential for growth, and the inherent difficulties from such growth. It is useful in the planning stages to consider how the qualification will intercalate with other existing or future qualifications and whether it could have direct professional value to the candidates in terms of salary or promotion. Early engagement with stakeholders including the national medical registration board, Universities and other academic institutions and national education qualification authorities is crucial.

New emergency medicine educational products are constantly developed across Africa. The impact of these qualifications should be considered not just in terms of EM but also in general health system training, the potential candidate pool, and national human resources for health. Systems should be in place to ensure that the assessment remains valid and that the outcomes in terms of candidates and the needs of the health system are continuously evaluated.

Dissemination of results

The thoughts and perspectives were generated through work done by the College of Emergency Medicine Council and were discussed at the biannual council meetings. The findings of the candidate survey was published in the Transactions of the Colleges of Medicine of South Africa.

Authors' contribution

Authors contributed as follow to the conception or design of the work; the acquisition, analysis, or interpretation of data for the work; and drafting the work or revising it critically for important intellectual content: HG contributed 40%; DC and WJ contributed 15% each; and RD, DF, AP, AG, TS and SL contributed 5% each. All authors approved the version to be published and agreed to be accountable for all aspects of the work.

Declaration of Competing Interests

The authors declared no conflicts of interest.

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